

SUPPLEMENTAL REMARKS/ARGUMENTS

Claim Amendments

The Applicant has amended no claims. Applicant respectfully submits no new matter has been added. Accordingly, claims 1-18 are pending in the application. Favorable reconsideration of the application is respectfully requested in view of the foregoing amendments and the following remarks.

Claim Rejections – 35 U.S.C. § 103 (a)

Claims 1-18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kao (US PG-PUB NO. 2004/0077377) in view of Mesecher, et al. (US PATENT NO. 6,937,879) and further in view of Walton et al (US PATENT NO. 7,248,879). The Applicant respectfully traverses the rejection of these claims

Kao describes standard beam-forming procedures. Applicant has noted that Kao is directed to combining signals to increase the strength of the signal received. Claim 1 of the present invention discloses subtraction of weighed signals from the received and weighed signals to provide a further, modified signal to provide better interference cancellation. The Applicant respectfully submits that the Kao reference lacks the teaching, at least, a plurality of signal sources and the modification of the signals from that plurality by using the modified signals of each signal source to further modify the signals for the radio access unit.

Mesecher is cited as subtracting a first signal from a second signal providing a corrected second radio signal. The Mesecher reference discloses receiving, by more than one antenna, first and second signals from a single source (col. 8, lines 21-36). A different beam is created with a second, separated antenna to pick up interference. This interference is then subtracted from the signals from the first, main antenna. Mesecher fails to disclose reconstructing the signals seen at the antenna and subtracting signals using coefficients gB . As shown in the figures, the Mesecher reference takes interference signals straight from the second antenna and subtracts that from the signals from the first antenna. Mesecher does not reconstruct the interference signal nor does Mesecher apply the antenna coefficients of the first antenna to the interference

signal. If no reconstruction is applied, the received signal at the second antenna may also include the wanted signal. This would then also be subtracted from the signal from the first antenna, which is not desired. Mesecher relies on the effect that the second antenna is sufficiently narrow and isolation between wanted and interfering signal exists. In the Applicant's case, isolation is not required since the interfering signal is reconstructed. In order to perform reliable demodulation, antenna patterns are only helpful to create a sufficient power difference between the desired and wanted results.

Walton presents a MIMO scheme regarding scheduling downlink signals. No interference cancellation is described in the base station (see Figure. 5). Again, I would like to point out that this reference is from Oct. 2003, more than a year later than my invention.

As previously noted, the present invention discloses and claims a method of interference cancellation in radio communication signals received by a radio access unit of a radio communication system. The present invention receives radio signals from a plurality of directionally separated antenna elements. A first radio signal received at the antenna elements, from a first mobile communication unit, is obtained by weighing the signals by first weighing factors. A second radio signal from a second communication unit is obtained by weighing the signals by second weighing factors. The signals are then reconstructed (paragraph 69). This process is iteratively conducted for each received signal, one signal at a time, for further radio communication units. (Figure 7) This is the opposite of the limitations in claims 1 and 11 of the present invention, wherein each of a plurality of sources provides a separate signal to the antenna means of claims 1 and 11. Neither Kao nor Walton provide support for rejection of this limitation.

The Walton, Kao and Mesecher references, individually or in combination, fail to teach all the elements of claim 1 and analogous claim 11. This being the case the Applicant respectfully requests withdrawal of the rejection of claims 1 and 11.

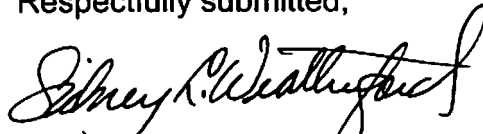
Claims 2-10 and 12-18 depend from claims 1 and 11 and recite further limitations in combination with the novel elements of claims 1 and 11. Therefore, the allowance of claims 1-18 is respectfully requested.

CONCLUSION

In view of the foregoing remarks, the Applicant believes all of the claims currently pending in the Application to be in a condition for allowance. The Applicant, therefore, respectfully requests that the Examiner withdraw all rejections and issue a Notice of Allowance for all pending claims.

The Applicant requests a telephonic interview if the Examiner has any questions or requires any additional information that would further or expedite the prosecution of the Application.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Sidney L. Weatherford", written in a cursive style.

By Sidney L. Weatherford
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